UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/824,554	04/14/2004	Ragupathy Madiyalakan	AREX-P03-005	6247

28120 7590 11/13/2006

FISH & NEAVE IP GROUP
ROPES & GRAY LLP
ONE INTERNATIONAL PLACE
BOSTON, MA 02110-2624

EXAMINER	
BRISTOL, LYNN ANNE	

ART UNIT	PAPER NUMBER
1643	

DATE MAILED: 11/13/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/824,554	MADIYALAKAN ET AL.	
	Examiner	Art Unit	
	Lynn Bristol	1643	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *19 October 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,3-6,9-16 and 22-30* is/are pending in the application.

4a) Of the above claim(s) *1,3-6,9-16 and 26-30* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *22-25* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *4/4/04; 10/28/04; 8/29/05*; 4/17/06
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. Claims 1, 3-6, 9-16 and 22-30 are all the pending claims for this application.

Election/Restrictions

2. Applicant's election with traverse of Group VII (Claims 22-25) in the reply filed on October 19, 2006 is acknowledged. The traversal is based on the grounds of essentially two different arguments, the first that in searching the method for determining efficacy of xenotypic antibody-mediated immunotherapy using a T-cell response versus a B-cell response does not impose a serious search burden on the Examiner (p. 7, second full paragraph). This is not found persuasive because the Examiner's search of xenotypic antibodies does not identify numerous references overlapping in addressing both development of the humoral and cellular immune responses. Further, Applicants have not even addressed the Examiner's technical reasons for restricting the methods of Groups I-VI from Group VII with technical or legal arguments. The requirement is still deemed proper and is therefore made FINAL.

The Examiner has considered Applicants arguments on p. 8-9 for withdrawal of the restriction between Groups I-VI, which are found persuasive. Accordingly, the restriction between Groups I-VI is withdrawn. However, because Applicants have not persuaded the Examiner that the ground for restriction between Groups I-VI and Group VII is improper, the restriction is maintained.

3. Claims 1,3-6,9-16 and 26-30 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to nonelected inventions, there being no allowable generic or linking claim.

4. Claims 22-25 are all the pending claims under examination.

Information Disclosure Statement

5. The IDS' filed 4/14/2004, 10/28/2004, 8/29/2005 and 4/17/2006 have been considered, however, for the IDS of 4/14/2004 the reference A6 lacks a full citation. There is no volume, page or year. Additionally, the IDS of 4/17/2006 for reference CK lacks the volume and/or name of the editor. If Applicants would supply this information the Examiner will add this to the IDS, otherwise, if this application goes to issue this reference will not be included on the face of the patent.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 22-25 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

a) Claims 22-25 are indefinite for reciting "determining efficacy" in Claim 22 because the exact meaning of the phrase is not clear. The phrase "determining efficacy" is indefinite when the claims fail to state the function that is to be achieved. The original

specification as filed does not define "efficacy". Is the efficacy of the xenotypic antibody measured in relation the patient being treated for a disorder by an immune T cell response or only with respect the level of the T cell response found in a patient having a disorder or condition?

b) Claims 22-25 are indefinite for reciting "favorable determination" because the exact meaning of the phrase is not clear. The phrase "favorable determination" is not defined in the specification. Is a favorable determination based on an improvement in some parameter or another being measured on a patient being treated for a disorder by an immune T cell response?

c) Claim 24 recites "T helper cell response is a cytotoxic T cell response". It is not clear how a "T helper cell response" can be the same as a "cytotoxic T cell response". The attached copy of the dictionary definition for a helper T cell teaches that it promotes killer or cytotoxic T cells.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

7. Claims 22-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Madiyalakan et al (WO 97/42973, published 11/20/97) and further in view of Goletz et al (U.S. Patent 5,997,869, issued 12/99).

The claims recite a method for diagnosing the efficacy of xenotypic antibody-mediated immunotherapy comprising measuring the level of a T helper cell or cytotoxic T cell response in a human to a target antigen of the xenotypic antibody after administration of the antibody to the patient, wherein an increase in the level of the Tcell response produced after administration of the antibody relative to the level produced by the patient prior to administration is indicative of a favorable diagnosis of efficacy. Due to the indefinite nature of the claims (see 112 second above) the claims are being interpreted to mean a method of determining if a T cell response was generated after xenotypic antibody administration and if there is an increased survival of the patients when the xenotypic antibody is administered to the patient.

Madiyalakan et al teach administration of a mouse antibody directed to CA125 which is Mab-B43.13 which led to increased in cytotoxic T lymphocytes in human cancer patients (see Examples 2 and 8) and stimulates both a humoral and cellular response and administration of the xenotypic antibody led to an increase in the mean survival of the patients (see example 9). Madiyalakan et al does not specifically teach measuring the T cell response prior to administration of the antibody. This deficiency is

made up for in the teachings of Goletz et al.

Goletz et al teach methods to immunize humans to induce cytotoxic T lymphocytes. Goletz et al also teach as a preliminary step to determine the T cell response prior to administration of an agent (see column 15, lines 41-44).

It would have been prima facie obvious to one of ordinary skill in the art at the time the claimed invention was made to have determined the T cell response prior to administration of the xenotypic antibody as taught by Goletz et al and add this to the method of Madiyalakan et al which teaches measuring the T cell response after administration of the xenotypic antibody.

One of ordinary skill in the art would have been motivated to and had a reasonable expectation of success to have determined the T cell response prior to administration of the xenotypic antibody as taught by Goletz et al and add this to the method of Madiyalakan et al which teaches measuring the T cell response after administration pf the xenotypic antibody because Goletz et al teach that a preliminarystep can be performed to determine the CTL response prior to immunization. In addition one of ordinary skill in the art would have been motivated to and had a reasonable expectation of success to have determined the T cell response prior to administration of the xenotypic antibody as taught by Goletz et al and add this to the method of Madiyalakan et al which teaches measuring the T cell response after administration of the xenotypic antibody because Madiyalakan et al teach a method for stimulating a cytotoxic T cell response and after administration of the xenotypic antibody a CTL response was generated (see example 9). Thus, it would have been obvious to

one skill in the art to determine the CTL response prior to administration because it is routine in the art to perform such a determination of CTL response prior to immunization in order to have a control to determine if an enhanced CTL response was obtained.

Therefore, the invention as a whole was prima facie obvious to one of ordinary skill in the art at the time the invention was made, as evidenced by the references.

8. Claims 22-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Madiyalakan et al (U.S. Patent 6,241,985, filed 3/20/98) and further in view of Goletz et al (U.S. Patent 5,997,869, issued 12/99).

The claims and the interpretation of the claims have been described supra.

Madiyalakan et al teach administration of a mouse antibody directed to CA125 which is Mab-B43.13 which led to increased in cytotoxic T lymphocytes in human cancer patients (see Examples 2 and 8) and stimulates both a humoral and cellular response and administration of the xenotypic antibody led to an increase in the mean survival of the patients (see example 9). Madiyalakan et al does not specifically teach measuring the T cell response prior to administration of the antibody. This deficiency is made up for in the teachings of Goletz et al.

Goletz et al teach methods to immunize humans to induce cytotoxic T lymphocytes and assays for determination of T cell responses. Goletz et al also teach as a preliminary step to determine the T cell response prior to administration of an agent (see column 15, lines 41-44).

It would have been prima facie obvious to one of ordinary skill in the art at the time the claimed invention was made to have determined the T cell response prior to administration of the xenotypic antibody as taught by Goletz et al and add this to the method of Madiyalakan et al which teaches measuring the T cell response after administration of the xenotypic antibody.

One of ordinary skill in the art would have been motivated to and had a reasonable expectation of success to have determined the T cell response prior to administration of the xenotypic antibody as taught by Goletz et al and add this to the method of Madiyalakan et al which teaches measuring the T cell response after administration of the xenotypic antibody because Goletz et al teach that a preliminary step can be performed to determine the CTL response prior to immunization. In addition one of ordinary skill in the art would have been motivated to and had a reasonable expectation of success to have determined the T cell response prior to administration of the xenotypic antibody as taught by Goletz et al and add this to the method of Madiyalakan et al which teaches measuring the T cell response after administration of the xenotypic antibody because Madiyalakan et al teach a method for stimulating a cytotoxic T cell response and after administration of the xenotypic antibody a CTL response was generated (see example 9). Thus, it would have been obvious to one skill in the art to determine the CTL response prior to administration because it is routine in the art to perform such a determination of CTL response prior to immunization in order to have a control to determine if an enhanced CTL response was obtained.

Therefore, the invention as a whole was prima facie obvious to one of ordinary skill in the art at the time the invention was made, as evidenced by the references.

Conclusion

9. No claims are allowed.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lynn Bristol whose telephone number is 571-272-6883. The examiner can normally be reached on 8:00-4:00, Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Larry Helms can be reached on 571-272-0832. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

LARRY R. HELMS, PH.D.
SUPERVISORY PATENT EXAMINER

LAB